

With the Author's Compliments

ON THE
EXPEDIENCY OF INSTITUTING
AN
ACADEMY OF MEDICINE
IN ENGLAND ;

ILLUSTRATED BY
THE PREVAILING OPINIONS AND PRACTICE
RESPECTING
The Use of Chloroform in Operations.

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ON THE EXPEDIENCY OF INSTITUTING AN ACADEMY OF MEDICINE IN ENGLAND,

ETC.

AT present, when the question of the reform of our medical institutions is before the Legislature, it appears opportune to consider whether a beneficial addition might not be made to those that have for their object the promotion of medical science, as well as an alteration effected in those that relate to the qualifications and well being of the members of the profession.

Amongst the former, there is much need of an Academy of Medicine, similar to that in France and other countries; and, as the best proof of this, I shall bring forward an illustration of the fact, that the most pernicious medical practices may exist in England, even amongst well informed practitioners, merely because there is no opportunity of thoroughly canvassing their merits, and exposing the fallacies by which they are supported. I shall adduce a proceeding which has deprived great numbers of their lives, while the purpose for which it is used (a purpose that under no circumstances would justify such a sacrifice), can in many instances be as well accomplished, and with perfect safety, by other means.

An Academy of Medicine, instituted for the promotion of medical science, should consist of a limited and selected number of the most talented and experienced members of the profession: and amongst its offices would be the correc-

tion of prominent errors in medical practice ; the encouragement of investigation by prizes and other means ; the rendering of assistance to practical inquirers, by gaining access for them to the records of cases in the public hospitals ; the reception of, and reporting upon, proposals of improvements in the treatment of disease, and, when these improvements are verified, the introduction of them into practice, and particularly into the practice of hospitals. Its duties as the counsellor of Government on subjects relating to the health of the community would be of no less importance ; but, being of a different aspect, need not at present engage our attention.

Of English medical improvements or inventions, it is probable that the greater part sink into oblivion, or die with their authors, because there is no opportunity of making them known and appreciated. If they are published in monographs or journals, they are lost amidst the mass of useless projects constantly issuing from the press ; and if their authors bring them before the existing medical societies, they experience no better fate. We are told in the life of Jenner, that, in consequence of his persevering endeavours in some medical societies to obtain a due appreciation of vaccination, he was threatened with expulsion from them, as an “insufferable bore”. These associations, though on other accounts exceedingly useful, hardly aim at, and certainly do not fulfil, the purposes of such an academy as has been contemplated. Few of those whose talents and experience would give weight to their opinions, though they very properly countenance and support such institutions, take any part in their proceedings.

Had such an academy as is now proposed existed in Britain, many inventions would not have been lost, and many, which have survived neglect, would have sooner been brought into use. The excision of joints in lieu of amputation, for example, and the compression of aneurismal arteries in lieu of their closure by a ligature, would not have required half a century to become established operations in surgery.

Many other important points in therapeutics remain in-

volved in some degree of doubt, principally because the statistics are not accessible by which they can be best determined. Amongst practical improvements, I may be excused for mentioning one of great value, which, from want of that aid which an academy would have afforded, has, as respects its principal uses, remained almost unknown. Had there been such an institution in this country, the plan only now introduced into Germany by Langenbeck, of accurately regulating the temperature of amputation and other severe wounds, and excluding the air from them, whereby the mortality from operations and compound fractures has in his practice been much reduced, would, from the urgent necessity of such an expedient, have doubtless been in use ten years ago ; for a longer period than this has elapsed since the “water muff” for encircling diseased or injured joints and limbs, with its gutta percha “supporter” and long caoutchouc tubes to effect a continuous current, was described in my essay *On the Present State of Therapeutical Inquiry*.*

But of practical questions at present before the profession, and requiring for their decision the investigation and authority of an academy, there is none of more importance than that respecting the use of chloroform in operations ; and to its consideration the remaining part of this paper will be given. One example of such questions, fully stated, will be enough to show the necessity of such an institution.

More than a hundred years have elapsed since a minute account was given, in the *Philosophical Transactions*, of the insensibility caused in dogs by immersing them in the me-

* That this apparatus is not wholly unknown here, is mainly to be ascribed to the accident of its being profitable to the manufacturer. Every surgeon must have seen the representation of a patient, to whom what I have termed the “intermitting current apparatus” is being applied, with which one of its makers (the first in whose hands I placed it) has illustrated his advertisement in all the English medical journals for the last six years. The most complete account of the current apparatus and its various uses is given in a treatise *On Indigestion*, 1847. It is briefly described in Dr. Watson’s *Lectures on the Practice of Physic*, 3rd edit., vol. i, page 388.

phitic vapour of the Grotto del Cane, near Naples. Dr. Hickman recommended the inhalation of this vapour, in order to render operations painless, about seventy years afterwards, but not until Sir H. Davy had suggested nitrous oxide gas for the same purpose. The fear, however, of injurious consequences, appears to have long prevented surgeons from endeavouring to revive by such inhalations the ancient practice (alluded to by Shakespeare and Bocaccio) of preventing pain in operations; and it was not until ten years ago that they were actually brought into use by an adventurous American dentist, Mr. Horace Wells. A number of inhalable substances, of similar properties, have since been employed; but the vapour which has been principally resorted to in this country is that of chloroform. Although several instances of sudden death occurred from these agents soon after their introduction, it was supposed that this fatality might arise from the faulty mode of administering them; and the dread of more remote evils was completely dispelled by the publication of statistics professing to prove that it had no foundation. After no great length of time, recourse was unhesitatingly had to chloroform on every trifling occasion, notwithstanding that sudden deaths continued to occur. Familiarity with danger put an end to the apprehension of it. We had in the indiscriminate and fearless use of the new drug an instance of what Celsus calls "*audacia usu ipso confirmata*". Large doses were recommended in preference to the small ones originally used; and extreme debility or disease of the heart, instead of being deemed objections to the administration of chloroform, were at length spoken of as conditions in which it might be given with peculiar advantage!

Never has there existed in the practice of medicine a more pernicious error than this common and indiscriminate use of chloroform. Its advantage in preventing pain is palpable and immediate; its disadvantage or danger is, in most instances, latent and remote, and hence, until lately, it has been undiscovered. It certainly is not unaccompanied with the perils which caused the expulsion from surgery of the operation narcotics of former times.

The deaths caused by chloroform may be divided, first, into those which take place during its administration ; secondly, those occurring some hours afterwards, but which, as is evident from the symptoms, are certainly the consequences of chloroform ; and thirdly, those that happen long after its exhibition, and as the result probably of its having predisposed to pyæmia and other morbid affections, well known as proving fatal after the severer operations. These last, which are by far the most numerous, can only be discovered to be the consequences of chloroform with any certainty, by instituting comparisons between the amount of mortality in similar cases before and after the time of its introduction.

About a hundred instances of *sudden* death from this new practice have been reported ; but there cannot be a doubt that the greater number have been concealed. Amongst other proofs of this, it may be mentioned that six times more deaths have been published as happening in the hospitals of London, than in its private practice ; and scarcely half a dozen such accidents have become generally known in France. This evident concealment, of which every medical man must know instances, is not extraordinary ; nor can it now be deemed more reprehensible than the concealment of fatal accidents from other drugs. For what family is there that would not shrink from the horrors of a coroner's inquest, where, as happens in these cases, there can be no suspicion of foul play ?*

* Although few cases of sudden death from chloroform have been published in France, and although its ulterior effects have scarcely been adverted to by continental practitioners, we find one of the leading surgeons in Paris—M. Ricord—speaking of it in the following terms, in the interesting debate on the subject now proceeding at the Academy of Medicine :—“ I refrain as much as possible from the use of etherization. Etherization, in my view, is a hazard which complicates operations. It is doubtless a great discovery, and has rendered much service ; but it must not be concealed that it is also a great danger. Accordingly, I never have recourse to it but under extreme necessity, or when I am strongly importuned ; and, in minor operations, I refuse to employ it.” (*Gazette des Hôpitaux*, July 9th.)

I am inclined to think, however, that sudden deaths from chloroform have not been so frequent in France as in England. More attention is there paid

The second class consists of those deaths, from the direct effects of chloroform, which have been attributed to other causes. Of these, Mr. Mouat, who had charge of the field hospital at the Redan, has given us examples in the cases of soldiers who never rallied after its administration, but sank “from exhaustion in from twelve to twenty-four hours” ;* and M. Chassaignac, of the Hôpital Laborisère in Paris, has recently described similar occurrences.† Indeed, whoever reads attentively the circumstantial hospital reports of amputations, etc., in the *Medical Times and Gazette*, during the last four years, will meet with many deaths which are unquestionably of this description.

The more remote effects of chloroform, though they may be guessed at by analogy, can only be satisfactorily ascertained by statistics. Dr. Simpson endeavoured, by returns from various hospitals, to make it appear that these effects are beneficial ; and that chloroform, though proving immediately fatal in some instances, lessens the general mortality from operations by promoting, on other occasions, the healing of the wound. We must not, he argued, prohibit bathing because a few persons are drowned, for many more lives are saved by its salutary effects than are lost by such accidents. But the truth is, there can be no comparison between the exhibition of chloroform and ordinary bathing. Instead of compensation, there is much additional destruction. The administration of chloroform resembles, in this respect, bathing in a dangerous river, and the long continued stay of an invalid in very cold water. Nor can any comparison be made, in this respect, between chloroform and other powerful drugs. These very rarely prove fatal in the hands of skilful practitioners ; and when they do so, it has not been for so comparatively small a purpose as the prevention of short pain that they have been administered. The tables which Dr. Simpson published in proof of the opinion

to the circumstances which prohibit its use in particular cases ; and the employment of “inhalers” in its administration has been generally condemned.

* *Medical Times and Gazette*, August 31, 1856.

† *Lancet*, February 23, 1857.

of ultimate advantage from chloroform, and which have unfortunately been as authoritative with many surgeons as the Northampton Life Tables are with assurance companies, involve the greatest fallacies. I have elsewhere shown, that when the data on which they were founded (and which are, no doubt, authentic and accurate) are properly used, the very reverse of his proposition is proved by them.

I have renewed the investigation of this subject by statistics, and have discovered that the destruction of life by chloroform has been very great. Besides the data which Dr. Simpson had collected, a subsequent series of accurate returns of amputation and lithotomy cases from the London and provincial hospitals, have been made use of; and from these collectively, the clearest evidence is afforded that the mortality since the introduction of chloroform has increased more than 10 per cent. after amputation, and more than 20 per cent. after lithotomy on the adult. In other words, instead of one patient dying in four or five after amputation as formerly, one now dies in three; and instead of one adult dying in four after lithotomy (which is rather more than the former ratio), one now dies in two. These facts may be better understood from the following tables, which are abridgments of several published in the *Medical Times and Gazette*, Oct. 25 and April 25, and, partially, in *Ranking's Retrospect* for the last year. The authorities for the data are there given, and the principles on which the tables were constructed are explained, both in the observations accompanying them and in several controversial letters on the subject which have subsequently appeared in the same journal.

Attempts have been made to account for the great increase of mortality after the severer operations, by assigning other causes than chloroform; but while this has all the evidence of the real cause, the others, such as a decay of surgical skill, an epidemic pyæmia, the cholera, etc., have not the slightest plausible foundation. Hospitals are better ventilated than they used to be; pyæmia, though better known and more frequently detected than formerly, has not in-

creased independently of chloroform ; and surgery, with this solitary exception, has advanced. On the other hand, chloroform has proved itself a virulent poison by the numerous sudden deaths that have happened during its administration, and by the suffocations, faintings, etc., bordering on death that have still more frequently been produced by it. That its agency is not of that transient character which has been represented, is evident from the extreme and long continued prostration that so often follows it, as well as from the persisting vomiting, headache, shivering, and other symptoms, denoting severe constitutional disturbance. But the fact that, in many cases, death has happened hours or days after its administration, and without any intermission of the unfavourable symptoms produced by it, sets this question at rest. "It would seem," to use the words of M. Chassaignac, "that the injury done in these cases to the vital forces by the chloroform has been so profound that the patient could not recover from it." Besides, it is well known that a fatal influence is often excited by causes that produce no discernible symptoms. Hæmorrhage, foul air, and intoxication, are of this description. Like chloroform, the two last are secret poisoners ; for one who is suddenly cut off by these (as in drinking for a wager, or as when, on a late occasion, the passengers of an Irish steamboat were, during a storm, crowded under hatches), thousands die from the predisposition to fatal disease which is caused by their debilitating effects. Would a surgeon have no fear of excessive alcoholic intoxication interfering with the healing of the wound in a patient undergoing amputation of the leg ?

Now, when we reflect that agents so powerful and dangerous as the intoxicating vapours have been universally employed in every important operation for the last six years, we cannot be surprised to find that operations so severe as themselves to place the patient in danger, should during that period have proved much less successful than formerly. On the contrary, a different result would be the strangest anomaly ; and there is, perhaps, no other instance in medicine where the influence of authority and

example, the bold denials of mischief by interested parties, the hopes and fears of both practitioners and patients, and other misleading influences, have so prevailed against a truth which, to the unprejudiced, must appear so palpable. The obstinate resistance of the "hot and sweating regimen" in fevers, against the facts and arguments of Sydenham, was not nearly so extraordinary. It would not be more extraordinary if the pain caused by disease, like that from operations, had on all occasions, and with utter disregard to the patient's life, been repressed by opium. Narcotism or stupefaction, whether produced by chloroform or Godfrey's cordial, is a certain preventive of pain however originating; but it is surely an important question on what occasions it ought to be had recourse to, and whether the patient's safety ought always to be sacrificed to his ease.

It is necessary, however, to advert to a great misapprehension that has existed in respect to this inquiry. Although statistics do not constitute the only proof of the great ultimate mortality from chloroform, they are assuredly the most convincing; but as there are some persons so unacquainted with the principles of statistical investigation as not to place any confidence in its results, it is proper to state that the question of the propriety of using chloroform in operations by no means depends upon this proposition of an *ulterior* mortality. Had they been all reported or made generally known, it would have been universally acknowledged that the deaths forming the other two classes mentioned above, or those occurring at an earlier period, would alone constitute an amount of mortality which it is perfectly unjustifiable to produce for the prevention of the transient pain of ordinary operations.

"Are we, then, again to have our operating theatres filled with shrieks, and the unpractised surgeon unnerved by the sufferings of his patient?" By this question, it has by some, been strangely supposed that a satisfactory refutation is given to every objection against the use of chloro-

form; and there is implied in it a charge of cruelty against those to whom it is directed, as if cruelty is not more manifest in recklessness about a patient's life than about his ease. Fortunately, however, if their dangerous nature obliges us to abandon the use of intoxicating vapours in the great majority of operations, we should not, in our humane endeavours to prevent pain, be left without a resource. Insensibility can in most instances (and in almost all to a great and very useful extent) be perfectly produced, and with complete safety, by applications made to the part itself which is to be operated upon, and without the suspension of the patient's consciousness.

It is a singular circumstance, that both the general and local modes of preventing pain in operations should long have been familiarly known as capable of producing insensibility, and both avoided, on account, probably, of their supposed danger. I have already spoken of the mephitic vapour of the Grotto del Cane. Still better known was the numbing effect of intense cold on parts exposed to it. But while the fears of the inhalation of vapours have unhappily been verified, those respecting cold have been proved to be groundless. For several years the local application of intense cold has been employed in surgical operations, not only without a single untoward occurrence, but with the immense additional advantage over chloroform of warding off that excess of inflammation from operation wounds which so often prevents their healing. It had not occurred previously to my investigation of the subject, that although long continued congelation, such as accidentally occurs in very cold climates, will injure the more isolated parts of the body, it may, when short and regulated, be a very different process; a process perfectly free from danger, yet so powerful, as not only to produce insensibility in operations, but to constitute a prompt and unfailing remedy in many inflammatory and painful diseases.*

* A minute is a sufficient period for congelation in operations, though a longer application may sometimes be desirable to secure its antiphlogistic as well as its anæsthetic powers. Some time ago, with a view to destroy painlessly

The only reason which can be assigned for the fact that cold has not yet generally superseded chloroform in many operations is, that its proper application requires a little more skill and involves a little more trouble. Nothing can be easier than to pour chloroform on a handkerchief and hold it under the patient's nose ; but it requires some practice to congeal a part properly, and some pains to prepare the frigorific materials suitable for the degree of cold required. Yet surely these reasons would have formed no barrier to its adoption had surgeons been aware of the true character of the proceeding for which cold was proposed as a substitute. A conscientious practitioner thinks not of trouble when the life of his patient is at stake, and he is anxious to learn to do that perfectly which may be of service to him.*

the outer part of an occult cancerous tumour in the breast, I kept up congelation for nearly an hour, without causing the least permanent injury of the skin.

I am glad to mention this decisive fact, as it utterly demolishes the prejudice which still tends to delay that extensive use of the remedial agency of intense cold which is required to supply a great desideratum in therapeutics ; for though cold has been used and much esteemed since the origin of medicine, its most efficient *dose* was unknown. Yet the medical journals furnish evidence that new and valuable applications of it are every now and then occurring. Even in deep seated disease of the viscera, it has been found an effectual resource when other remedies have failed. In the *Liverpool Medical Journal* for this month, there is a report of the use of congelation as a means of immediately and permanently suppressing phthisical vomiting ; and, in a recent French medical journal, several cases of obstinate obstruction of the bowels are related, which were cured at the Hôtel Dieu by cold, after other means had been used in vain. It is true that the degree of cold in the latter instance was not so intense as that produced by frigorific mixtures ; but, as the reporter justly states, the now well established innocuousness of this greater degree has emboldened physicians to employ ice with a degree of freedom which formerly would have been avoided. Under different circumstances, however, as when the part does not possess much vitality, a prolonged remedial congelation will destroy it, and may be usefully employed for such a purpose. In an interesting history of the various remedies adopted of late years in cancer, contained in the *Medical Times and Gazette* of this week, there is an account of the speedy removal by congelation of "a large flabby convex growth"; and M. Velpeau, in his *Treatise on Cancer*, speaks of its advantages in similar cases.

* Exaggerated notions, however, of this "trouble" are entertained. At a

It has not proceeded from want of sufficient evidence of its excellence that local insensibility from cold has not as yet been generally adopted. There are a great many reports of its successful use in the medical journals of Europe and America, and in works written by the respective operators. It has been employed in the excision of tumours by M. Velpeau, Mr. Paget, Mr. Bellingham, Mr. Erichsen, Mr. Ward, Mr. A. Johnson, Mr. Fleming, and others. Various surgeons have reported their successful use of it in the operation for hernia, in tracheotomy, amputation of the fingers, evulsion of the nails, breaking down nævi, opening abscesses, carbuncles, and whitlows, the extraction of foreign bodies, the removal of cicatrix, and operations on the eye. Half-a-dozen treatises by English and foreign dentists have described the use of congelation in operations on the teeth. Mr. Lawrence and M. Nelaton have prevented the pain of the actual cautery by it; and Mr. Langston Parker, the pain from caustics employed for the enucleation of cancer. One of the last reports referring to congelation which I have seen, mentions another employment of it in this disease by Mr. Stanley at St. Bartholomew's Hospital, namely, for the painless removal of the skin covering two scirrhus tumours previously to the application of chloride of zinc.*

In reference to the use of congelation in cancer, I may mention that this is by no means confined to these combinations of it with caustic; but it would be foreign to the pur-

recent inquest on a death from chloroform at St. Thomas's Hospital, it was stated that there was a difficulty experienced in placing the patient, who was about to have his finger amputated, under its influence. Would it not have been less troublesome to have dipped the finger for a few seconds into a glass of dissolving ice and salt, as was done with perfect success in a similar amputation, related at a late meeting of the Harveian Society? In estimating the comparative trouble of the two methods, we must not forget the various instrumental means of averting sudden death, with which every conscientious practitioner must be provided before administering chloroform; nor the hours spent in attempts at resuscitation by artificial respiration, galvanism, suspending the body by the feet, etc.

* A highly refrigerated mineral acid might, by means of an open cup or flat ring fitted to and pressed upon the part, be employed for the purpose of simultaneously benumbing and destroying.

pose of this paper to enter upon the consideration of the curative properties of intense cold, unless so far as they illustrate its utility in operations.

I shall only now remark in reference to its antiphlogistic properties, which are of the highest importance in this respect, that the fact of an adequate degree and continuance of cold so altering the functions of the vessels and nerves of the part subjected to it, as not only to arrest inflammation instantly, but to render the part incapable of this morbid affection some time afterwards, constitutes, from the extensive applicability of the remedial principle, one of the most important medical truths which have yet come to light.

The only defect in congelation, as a mode of producing insensibility in operations, is the small extent which its influence can penetrate from the surface. But in the greatest number of cases this objection does not hold. Even in amputation of limbs, the principal portion of the pain may be thus avoided, for that is produced by the incision of the skin and its dissection from the underlying flesh; and the separation of the skin from the surface of large tumours is, also, the most painful part of their excision. Congelation, however, might be conjoined with pressure, and either so long continued or produced by such powerful frigorific mixtures, as to remove this objection; or the mixture may be applied after the first incision, as has been practised with excellent effect in America. The mode of applying this agent is probably yet far from perfection, but the principles to be attended to in the procedure, are, I think, fully pointed out in my writings on the subject.*

* I have minutely described the mode of applying intense cold in operations in several papers in the *Medical Times and Gazette*, Nov. 11th, 1854; Nov. 24th, 1855; Feb. 14th, 1857; and, incidentally, in Treatises on its curative agency in Headache, Neuralgia, Rheumatism, and Cancer.

It were needless to notice another objection to congelation, that it is itself a cause of pain, as this has long since been declared groundless, but the following ludicrous artifice of an opponent deserves a remark in passing. In a popular article on Chloroform, by Dr. Simpson, in the *Encyclopedia Britannica*, congelation is called "frost-biting." As no one is better aware than

I think it would be difficult to bring forward a question connected with medicine on which the investigation and authority of an "Academy" is more required than that which I have now briefly and imperfectly stated; and which, it appears to me, cannot be otherwise speedily determined. A single death produced by a practice for which there is a complete and safe substitute is a lamentable and discreditable occurrence, for such a practice is condemned alike by the moral and statute law; but if great numbers are cut off by the use of intoxicating vapours for the avoidance of transient pain, even though this could not be otherwise prevented, the fact demands immediate notice and correction. The evidence which has been adduced proves that many die from the immediate effects of chloroform; others, within a few hours of its administration; and a very large number at more advanced periods, notwithstanding that the object for which it is administered might, in most instances, be fully attained without the slightest hazard. Yet, as respects the last class of deaths, or those caused by the ulterior agency of chloroform, it is proper to mention, that this disastrous error can hardly be said to reflect discredit on any one; for it was only discoverable by statistical investigation, and this, necessarily, could not be instituted until after a considerable lapse of time.

London, July 12th, 1857.

Dr. Simpson (who has often employed congelation remedially) that there is no resemblance between its effects and those of what is usually termed frost-bite, his knowledge of the power of names to excite prejudice, is as clearly shewn here, as when the significant phrase "excessive inebriation," originally used in America to express the effect of ether and chloroform, was so adroitly changed by him into the unsuggestive term, "anæsthesia."